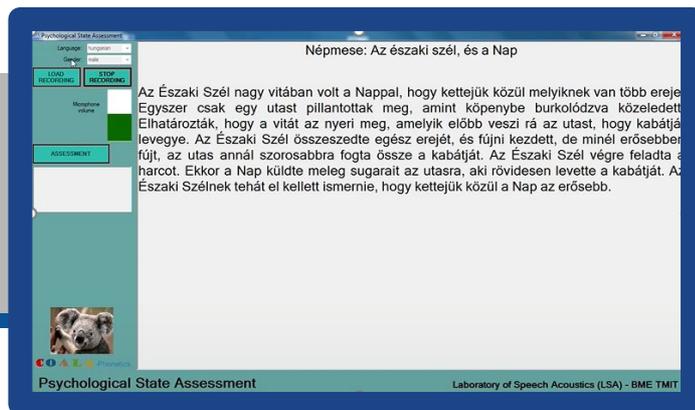


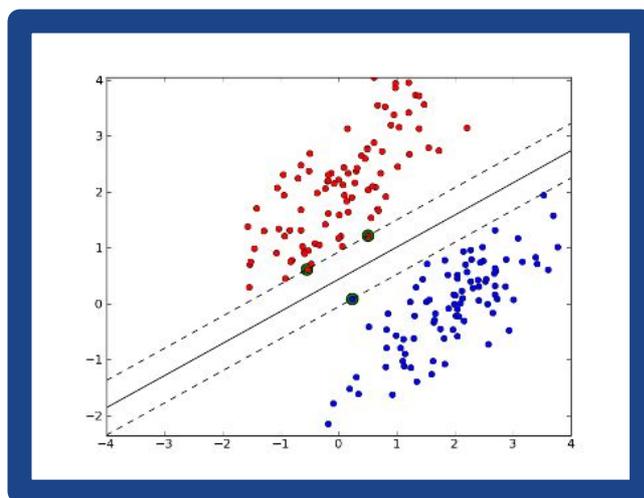


DEPRESSION DETECTION

VIA AI-BASED VOICE ANALYSIS



Early detection of depression is crucial for both the patient and the wider society - yet two thirds of people suffering from depression never receive a professional diagnosis. Our solution addresses this issue by providing an easily accessible, user friendly, fast and convenient Artificial Intelligence-based diagnostic procedure. Our algorithm calculates speech characteristics from a recorded voice sample via digital signal processing, the results of which are then used to create an AI model that detects whether and to what degree the speaker suffers from depression.



SOLUTION

The voice recording of a short text (~45 seconds) read by the patient is processed using digital signal processing methods to calculate both acoustic and phonetic characteristics. These serve as input to a machine learning procedure (currently a support vector machine). Based on this, the model that emerged during the teaching phase provides a probabilistic outcome for the speaker's level of depression. The final output provides an estimate of the severity of the patient's status (BDI score) and the likelihood of depression (% value).

TRL 5 Technology validated in relevant environment (experimental database and AI model are operational, prototype is ready and undergoing further testing)

SEEKING one or more industry partners to further develop the technology and for licensing purposes.

PUBLICATIONS David Sztaho, Klara Vicsi.: *Depression State Assessment: Application for detection of depression by speech*
In: Gernot, Kubin; Zdravko, Kačič (eds.) *The 20th Annual Conference of the International Speech Communication Association (2019)*

BENEFITS

- High detection accuracy (over 92%)
- Excellent potential for self diagnostics
- Potential for both local and cloud-based application

APPLICATION

- General practitioners
- Elderly homes
- Healthcare and insurance providers
- Transportation and high-risk workplaces
- Law enforcement and defense

INVENTORS

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INTELLECTUAL PROPERTY

Software Licence, Database Licence,
Know How

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